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TWO NEW CHALCIDOID EGG PARASITES (EULOPHIDAE AND MYMARIDAE).

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The following two new species of egg parasites are described at this time in order to make the names available for use in economic papers about to be published.

Family EULOPHIDAE.

Tetrastichus silvaticus, new species.

Closely resembles *Tetrastichus blepyri* Ashmead but the females may be distinguished from that species by the black scape, blackish tibiae, somewhat narrower abdomen, slightly weaker sculpturing of the mesoscutum, and presence of fewer (usually three) erect setae on the submarginal vein. The males differ by having much longer hairs on the funicle joints. The species is easily distinguished from *T. malacosomae* Girault by the black color and the shorter abdomen.

Female.—Length 1.2 mm. Black, somewhat shining, the sculpture of head, thorax, and abdomen weaker than in most species of the genus; antennae entirely black; front tibiae, narrow apical bands on middle and hind tibiae, and first three joints of all tarsi yellowish, rest of legs black; wings hyaline, venation brownish. Head (collapsed) weakly sculptured; scape rather short and slightly compressed; first funicle joint equal to the pedicel or slightly longer; second and third funicle joints subequal, longer than wide and each a little shorter than the first; club a little thicker than funicle, about equal in length to the two preceding joints combined; mesoscutum very finely and delicately sculptured, the median groove present but often very delicate; scutellum sculptured like mesoscutum,

the two dorsal grooves distinct; postscutellum nearly smooth; propodeum with some very obscure lineolation, practically smooth and shining, without folds but with a weak median carina, the spiracles elliptical; mesopleura and prepectus nearly smooth; coxae and femora nearly smooth; fore wings extending much beyond apex of abdomen, a little less than two and one-half times as long as broad; marginal vein much longer than submarginal and about three times as long as stigmal; postmarginal absent; stigmal vein slender and only very slightly thickened at apex; submarginal vein with three setae dorsally; marginal cilia about two-thirds as long as the stigmal vein; discal ciliation moderately long, and uniformly distributed except that the area behind the submarginal vein and a triangular area behind the proximal one-third of the marginal vein are bare, the two bare areas separated by a transverse row of cilia extending backward from the break in the submarginal vein; a straight row of cilia running nearly parallel to the posterior margin of the wing extends from the transverse row to a point on the posterior margin somewhat beyond the apex of the venation. Abdomen about as long as head and thorax, approximately twice as long as broad, ovate, subacute at apex, very weakly sculptured above as well as beneath; ovipositor not exserted.

Male.—Length 1.2 mm. Antennae long; scape slightly expanded beneath, approximately twice as long as broad, the ventral margin with a sense organ which forms an elongate and distinct swelling extending from a point near apex to about the middle of scape; funicle four-jointed, the first joint subquadrate, a little thicker than pedicel, and about equal to it in length; second funicle joint about twice as long as broad, third and fourth a little longer; club three-jointed, no thicker than the funicle and distinctly longer than the two preceding joints; each of the funicle and club joints with a whorl of very long coarse hairs, these hairs on the basal segments five or six times as long as the segment, on the club joints somewhat shorter, those on the apical joint about twice as long as the segment. Abdomen not longer than thorax, subelliptical, narrower than thorax. All coxae, the hind femora except at apex, and more or less of the middle and front femora basally black, rest of the legs yellowish; antennal pedicel yellowish. Otherwise like the female.

Type locality.—Cass Lake, Minn.

Type.—Cat. No. 52253, U. S. National Museum.

Described from three females (one holotype) and three males reared from eggs of *Malacosoma disstria* Hübner, February 11 to 26, 1936.

Besides the type series, the following additional material, now in the National Museum collection, has been identified as this species: 7 specimens from Chippewa National Forest, Minn., reared at the Forest Insect Laboratory of the Bureau of Entomology and Plant Quarantine, New Haven, Conn., under their No. 181.201 in February and March, 1936; also 13 specimens from Bristol and Randolph, Vt., reared February 20, 1937, under Forest Insect Laboratory No. 181.203; 5 specimens from Cook County, Minn., reared by L. W. Orr in December, 1936; and three specimens from Fredericton, New Brunswick, reared

June 11 and 12, 1934, by C. E. Atwood. The host in each case is said to have been *Malacosoma disstria*.

Family MYMARIDAE.

Erythmelus psallidis, new species.

This supposedly new species is extremely similar to (*Anaphes*) *Erythmelus gracilis* (Howard) and may eventually prove to be merely a form of that species. The large series of specimens at hand seems to differ constantly from the type of *gracilis*, however, by having the joints of the funicle very slightly shorter in proportion to their thickness, the fore wings smaller, and the basitarsi only very slightly longer than the second tarsal joint.

Female.—Length 0.45 to 0.65 mm. Black, the abdomen with a broad basal band pale yellowish, and the vertex laterad of ocelli more or less yellowish; antennae fusco-testaceous, the club blackish; legs fuscous, the knees and bases of all tibiae pale; wings hyaline.

Antennae about as long as head and thorax together; scape about as long as pedicel and first four joints of funicle combined, subfusiform, and about four times as long as broad; pedicel about twice as long as broad at apex; funicle joints 1 to 4 successively increasing very slightly in length as well as width, each a little longer than broad; joint 5 usually subquadrate; joint 6 nearly twice as long as broad; club distinctly thicker than the funicle, long-ovate, very nearly three times as long as broad and about equal in length to the preceding four funicle joints combined. Fore wing extending distinctly beyond apex of abdomen, more than four times as long as its greatest width (not including the marginal fringe); marginal fringe longer than greatest width of blade; discal cilia wholly absent from base of wing to apex of venation except for a single short black seta midway between anterior and posterior margins and about opposite base of marginal vein, beyond apex of venation and midway of length of wing the discal ciliation consisting of two longitudinal rows of weak cilia, and on apical third of wing the cilia much stronger and more numerous; hind wing narrow, the discal ciliation mostly confined to an irregular row along anterior margin. Basal joint of tarsi on all three pairs of legs not more than one-fourth longer than the following joint, often subequal to the second joint. Abdomen about as long as thorax, ovate, the hypopygium extending slightly beyond apex of apical tergite.

Male.—Length 0.4 to 0.55 mm. Agreeing with the female except as follows: Antennae as long as body, very slender, 13-jointed; scape short and thick, approximately twice as long as thick; pedicel about as long as broad; funicle joints subequal, and each three to four times as long as thick; abdomen one-half to two-thirds length of thorax; legs paler than in female, the anterior and median pairs frequently mostly testaceous.

Type locality.—Tallulah, La.
Type.—Cat. No. 52285, U. S. National Museum.

Holotype, allotype, and six paratypes reared from eggs of the cotton flea hopper, *Psallus seriatus* (Reuter), on croton plants at Tallulah, La., September 6 to 19, 1936, by H. J. Crawford. Other paratypes either reared from or associated with eggs of the same hemipteron are from Florence, S. C.; Starkville, Miss.; Waldo, Ark.; Bay City, Lincoln, Ingleside, Leona, Hearne, Gilmer, Glen Flora, Bryan, Fannin, Port Lavaca, Huntsville, Tyler, Rockport, Washington County, Montgomery County, Grimes County, and Brazoria County, Tex.; and Tucson, Ariz.

TWO TYPES OF MOTHPROOFING SOLUTIONS.

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It is common knowledge that woolen fabrics are readily eaten by the larvae of clothes moths and carpet beetles. The latter are commonly known as buffalo moths, and for this reason the layman frequently refers to both of these insects as simply "moths." They are, of course, two entirely different types of insects; the clothes moth larvae being known as "moth pests," and the carpet beetle larvae as "dermestid pests," since carpet beetles belong to the family Dermestidae. Hence one often reads in trade journals of fabrics being treated with "mothicides" and "dermesticides" to render them resistant to the attacks of these insects. It is frequently claimed that a fabric treated with a "mothicide" may not be protected against dermestids.

In the course of investigations in the Bureau of Entomology and Plant Quarantine on the control of insects that destroy fabrics, the writer has, for the past 15 years, been interested in the use of moth-proofing solutions as a means of preventing damage. Among the many species that attack fabrics, special attention has been given to the webbing clothes moth (*Tinola biselliella* Hum.), the furniture carpet beetle (*Anthrenus vorax* Waterh.), and the black carpet beetle (*Attagenus piceus* Oliv.), and many tests of various mothproofing solutions for protecting fabrics against these three insects have been made. Early investigations showed that in experimental work clothes moth larvae exhibited a high normal mortality which often led to a false interpretation of results. On the other hand, it was determined that the furniture carpet beetle, *Anthrenus vorax*, did not suffer such a high mortality; and furthermore, that fabrics resistant to carpet beetles were also protected against clothes moth larvae. In view of these findings, *Anthrenus vorax* has been used almost entirely in tests to determine the practical value of mothproofing solutions.